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GIANT BENIGN SEROUS OVARIAN CYST: A CASE REPORT

Obstetrics & Gynaecology

Dr. Shikha Resident, Rajshree Medical Research Institute, Bareilly.
Dr. Shweta Rai Professor, Rajshree Medical Research Institute, Bareilly.
Dr. Rajni Agarwal Head of Department and Professor, Rajshree Medical Research Institute, Bareilly.

ABSTRACT

Background: Giant ovarian cysts (>20 cm) are rare in adolescents and may mimic mesenteric or retroperitoneal cysts, delaying diagnosis. **Case:** An 18-year-old female presented with amenorrhea, hirsutism, lower abdominal pain, and urinary burning. Imaging revealed a massive abdomino-pelvic unilocular cyst. Exploratory laparotomy identified a giant right ovarian cyst measuring 23 × 16 × 14 cm. Complete ovarian cystectomy with ovarian preservation was performed. Histopathology confirmed benign serous cystadenoma. Postoperatively, the patient recovered well with normalization of menstrual cycles. **Conclusion:** Giant ovarian cysts in adolescents pose diagnostic challenges; early imaging and fertility-preserving surgery remain essential.

KEYWORDS

Giant ovarian cyst, Serous cystadenoma, Adnexal mass, Adolescent gynecology, Ovarian cystectomy

INTRODUCTION

Ovarian cysts commonly occur in women of reproductive age, but giant cysts >20–25 cm have become rare due to early detection with ultrasonography [1]. When extremely large, they may obscure their ovarian origin, compress surrounding organs, and mimic mesenteric, omental, or retroperitoneal cysts.

Recent literature describes giant cysts causing torsion or acute abdomen, such as a 36-cm serous cystadenoma presenting with torsion in a young woman [1]. Similar diagnostic difficulties are seen even in neonates with large ovarian cysts misinterpreted as abdominal masses [2].

This report describes a giant benign serous ovarian cyst in an 18-year-old, highlighting diagnostic challenges and successful fertility-preserving management.

Case Presentation

An 18-year-old female was admitted on 11 July 2025 with complaints of three months of amenorrhea and hirsutism, two months of lower abdominal pain, and three weeks of burning micturition. She had been married for two months and was nulligravida, with her last menstrual period on 11 April 2025. On examination, pallor was present and a large, smooth abdominal mass extending up to the epigastrium was palpable. The uterus could not be felt separately on bimanual examination, and fornicial fullness was noted.

Tumor markers were within normal limits, including CA-125 (10 U/mL), CA 19-9 (11.77), CEA (3.44), AFP (<1.3), and β-hCG (1.20). Ultrasound on 4 July 2025 showed a large anechoic unilocular cyst extending from the pelvis to the epigastrium, suggesting serous cystadenoma or mesenteric cyst. MRI on 5 July 2025 revealed a well-defined thin-walled cystic lesion measuring 24.1 × 18.6 × 8.7 cm, without septations, solid components, or calcifications, displacing bowel loops and compressing the bladder. Its origin remained unclear, raising suspicion of a mesenteric cyst. A repeat ultrasound on 11 July 2025 demonstrated a cyst measuring approximately 21 × 9 × 18 cm (≈1900 mL), with displacement but preserved morphology of the uterus and ovaries.

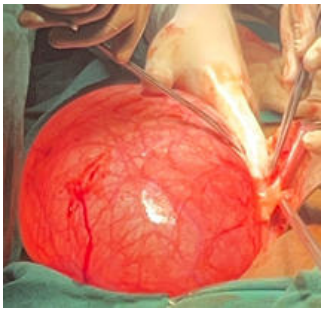

Figure 1. Intraoperative appearance of a giant thin walled ovarian cyst emerging from the abdominal cavity.

The cyst is smooth, tense, and highly vascular, occupying the entire abdominal cavity

Surgical Findings

Exploratory laparotomy uncovered a giant smooth-walled unilocular cyst arising from the right ovary and extending up to the diaphragm. The right ovary was stretched over the cyst, and the cyst occupied the entire abdominal cavity with omental adhesions. Complete ovarian cystectomy was performed, successfully preserving the ovarian tissue. The cyst was removed intact without rupture.

Figure 2. Delivery of the large ovarian cyst during laparotomy, demonstrating its attachment to right ovary

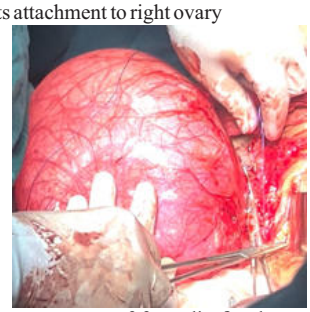

Figure 3. Gross appearance of formalin fixed specimen and size in comparison to the large curved artery forceps.

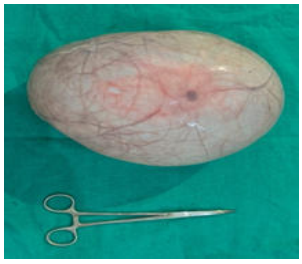

Figure 4. Cyst being mobilized from surrounding structures, showing intact cyst wall and displacement of abdominal organs.

Histopathology
Gross examination revealed a thin-walled unilocular cyst measuring 23 × 16 × 14 cm containing clear yellowish serous fluid, without solid areas or papillary projections. Microscopically, the cyst wall was lined by a single layer of flattened to cuboidal serous epithelium without atypia or malignancy. The final diagnosis was benign serous cystadenoma of the right ovary.

Postoperative Outcome
The patient tolerated surgery well. Oral intake was resumed by postoperative day two, and early ambulation was encouraged. She experienced no complications and was discharged on 19 July 2025. Her menstrual cycles returned to normal, and at follow-up she reported no pain or urinary symptoms. CA-125 levels remained within normal limits.

Patient Perspective
The patient expressed significant relief after surgery, feeling more comfortable and mobile. She was reassured by the benign nature of the cyst and expressed gratitude that her ovary and future fertility were preserved. She described feeling "back to normal" after her menstrual cycles resumed regularly.

DISCUSSION
Giant ovarian cysts are uncommon in the modern era due to the widespread availability of ultrasonography and earlier detection of adnexal pathology. Historically, ovarian cysts exceeding 10 cm were frequently encountered, but improvements in routine gynecologic evaluation have significantly reduced their incidence. Nonetheless, when such cysts do occur, they pose substantial diagnostic and therapeutic challenges because their large size often obscures their anatomical origin and mimics non-gynecologic masses, including mesenteric, retroperitoneal, and omental cysts [1,2]. In the present case, both ultrasound and MRI were unable to clearly establish ovarian origin, a finding also noted in other reported cases of giant cysts where distortion of the pelvic anatomy hinders accurate localization [3,4].

The patient's symptoms of abdominal distension, early satiety, urinary burning, and lower abdominal pain were largely attributable to pressure effects on surrounding viscera, a well-documented phenomenon observed in cysts exceeding 15–20 cm [5,6]. Gastrointestinal compression may lead to constipation or altered bowel habits, whereas urinary tract compression, as seen in this case, may manifest as frequency or dysuria [7]. Although rare, very large cysts can also compromise respiratory excursion by exerting upward pressure on the diaphragm, leading to dyspnea or orthopnea [8].

Serous cystadenomas constitute approximately 20–25% of benign epithelial ovarian tumors and typically present as thin-walled, unilocular cysts, consistent with our clinical and histopathological findings [9,10]. Their growth is usually slow, but some may enlarge rapidly in adolescents due to hormonal interplay during puberty, as described in several pediatric and adolescent case series [11]. In our patient, the concurrent presence of hirsutism raised the possibility of androgen production; however, benign serous cystadenomas are not hormonally active. The hirsutism was likely unrelated or may have been due to functional ovarian imbalance secondary to mass effect on normal ovarian tissue. Similar menstrual irregularities and endocrine symptoms have been reported in other young women with giant cysts [12].

Imaging plays a central role in evaluation, with MRI offering superior tissue characterization, especially in assessing septation, mural nodules, or solid components suggestive of malignancy [13]. Nevertheless, in giant cysts, classical imaging features may be distorted. In this case, MRI did not reveal malignant features such as papillary projections, thick septae, or solid vascular components, aligning with established benign radiologic criteria [14].

Surgical management remains the cornerstone of treatment for giant ovarian cysts. While minimally invasive approaches are preferred for small to moderate cysts, laparotomy is often necessary for giant cysts to avoid spillage, ensure safe mobilization, and prevent hemodynamic instability that can occur with rapid decompression [15]. In adolescents, ovarian preservation is a priority unless malignancy is strongly suspected. Our patient successfully underwent ovarian cystectomy with preservation of ovarian tissue, consistent with best-practice recommendations in pediatric and adolescent gynecology [6,9].

The absence of complications and normalization of menstrual cycles support the effectiveness of conservative surgery. Fertility-sparing approaches are associated with excellent outcomes in benign pathology, with low recurrence rates when cystectomy is performed appropriately [10,13].

This case highlights several key clinical lessons: the need for a high index of suspicion for ovarian pathology despite ambiguous imaging; the importance of correlating tumor markers, clinical presentation, and imaging; and the role of fertility-preserving surgery, particularly in young patients. Furthermore, it reinforces that even extremely large cysts can be benign, emphasizing the necessity of individualized assessment rather than over-reliance on size as a predictor of malignancy.

CONCLUSION
Giant benign ovarian cysts in adolescents may present with nonspecific symptoms and uncertain origin on imaging. Early evaluation, appropriate imaging, and timely fertility-preserving surgery are critical to prevent complications. This case reinforces the importance of considering ovarian pathology even when imaging suggests alternative abdominal masses.

Ethical Considerations
Written informed consent for publication of clinical details and images was obtained from the patient.

Conflict Of Interest
None declared.

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